

ABSTRACT OF THE DISCLOSURE

NOx sensor element of oxygen-ion conductive solid electrolyte body 15; flow passage (7, 5, 8, 6) provided within the body for introducing analyte gas; oxygen partial pressure detection cell 3; first oxygen pump cell 1 for controlling oxygen partial pressure of the gas in the flow passage; and nitrogen oxides detection cell 2 for decomposing nitrogen oxides in the gas having a controlled oxygen partial pressure and for causing dissociated oxygen to migrate through the solid electrolyte body (see FIG. 1). Operational amplifier 22b is connected between the nitrogen oxides detection cell 2 and a 12 V battery power source to generate a voltage applied across the nitrogen oxides detection cell 2; and diode 22d connected to a point between the operational amplifier 22b and the nitrogen oxides detection cell. The diode clamps the voltage to an activation voltage higher than the measurement voltage during activation.